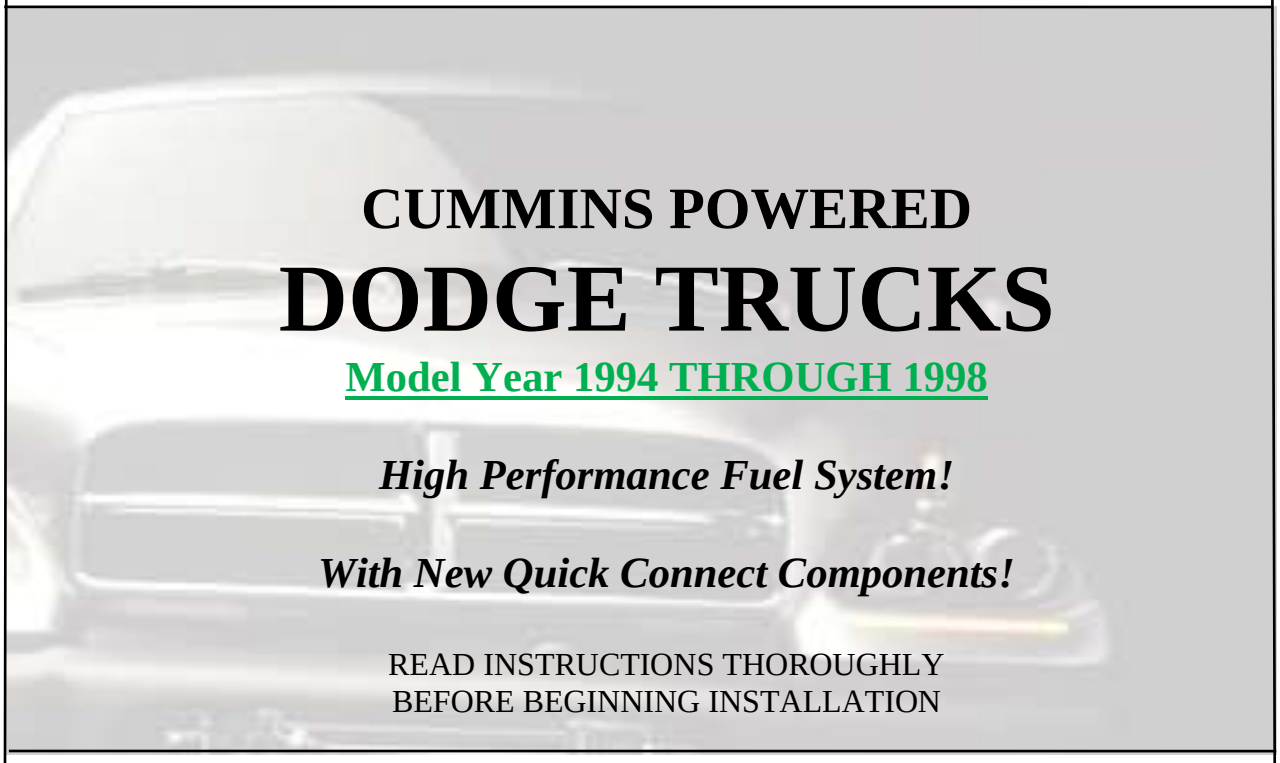
#2

## MODEL FP-100 & FP-150

# INSTALLATION MANUAL



## CUMMINS POWERED

# DODGE TRUCKS

**Model Year 1994 THROUGH 1998**

***High Performance Fuel System!***

***With New Quick Connect Components!***

READ INSTRUCTIONS THOROUGHLY
BEFORE BEGINNING INSTALLATION


*PureFlow AirDog*

705 MAUSOLEUM ROAD
SHELBYVILLE, IN 46176

1-877-421-3187

www.pureflowairdog.com



CANADIAN PATENT
2,108,391

PROTECTED BY
US PATENTS
5,355,860; 5,746,184; 6,729,310

AUSTRALIAN PATENT
2005101054

NEW ZEALAND PATENT
532356

Additional Foreign Patents Pending in Europe, South America, Mexico, Japan, and China!

# Approved for Sale and Use in California by CARB!

## SMALL and COMPACT

## 7″ Long X 3.2″ Wide X 10″ Tall

## OVERVIEW

Welcome to **PureFlow® AirDog®**
Fuel Air Separation, Filtration and Delivery System for the Diesel Engine!

The AirDog® Fuel Air Separation system is a Premium replacement lift pump and filtration system for the Dodge Cummins 5.9L 12 Valve diesel engine. A complete installation kit is included.

The AirDog® delivers clean fuel to the engine free of virtually all air/vapor and at a positive flow. Thus, allowing the engine "test cell" performance and efficiency, while in "real world" use.

The AirDog® FP-100 is recommended for stock and slightly modified 5.9L 12 Valve Cummins Diesels.

The AirDog® FP-150 is recommended for highly modified 5.9L 12 Valve Cummins Diesels.

PureFlow® products are manufactured with a personal touch,
unsurpassed attention to detail
and
the most stringent quality control!

## TYPICAL INSTALLATION LAYOUT

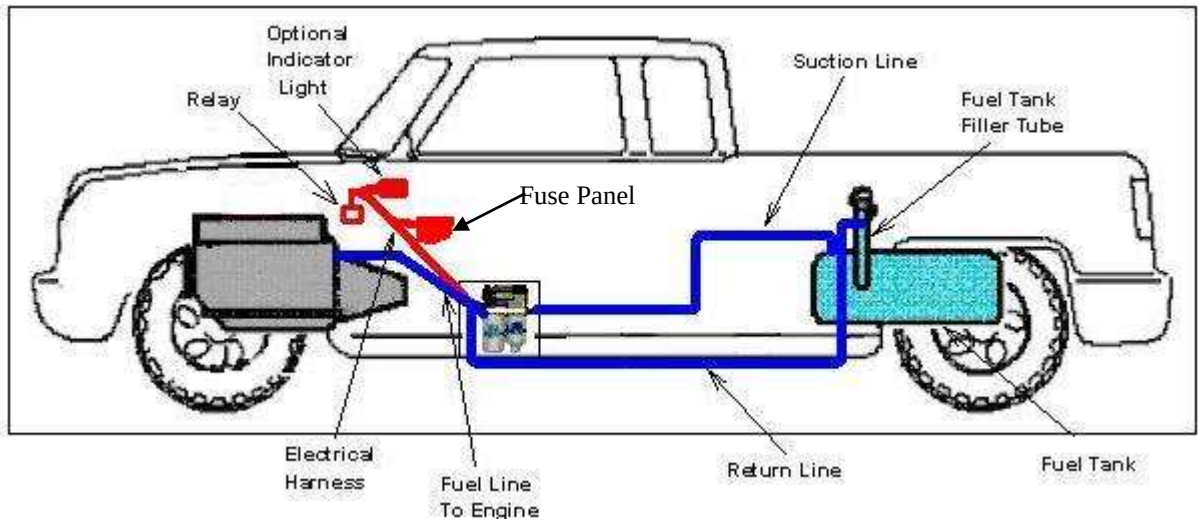



Figure 1

The AirDog® draws fuel from the fuel tank at constant flow, removing water, particulates, entrained air and vapor. A regulated pressurized flow is maintained to meet the engine's varying fuel demands. The separated air/vapor is returned by the AirDog® to the fuel tank.

**NOTE:** The pictures used in this manual are for example only and may not be exactly the same as your truck.

## QUICK CONNECT COMPONENT OVERVIEW

Provided in this kit is an OE style Quick Connect System. This system works to allow for a quick, clean, and professional install.

### SAE J2044 Quick Connect System

The SAE J2044 quick connect system is the most commonly used system in the automotive industry. The images below show the formation of SAE J2044 connection. To connect the assemblies, simply insert the male end form into the mating female connector. Push firmly until you hear it "click" into place. To disconnect the fittings, press down and hold the blue tabs on the female connector while you firmly pull the assembly apart.

# TABLE OF CONTENTS

Section 1…….....……..Table of Contents
Section 2….....Installation & Safety Guidelines
Section 3..…….....……Parts List

## INSTALLATION PROCEDURES

Section 4…..……..……AirDog® & Mounting Brackets

## FUEL LINES

Section 5 A……..……Fuel To Engine
Section 5 B…….……..Injection Pump & Injector Bleed Return
Section 5 C……..…..AirDog® Fuel Return to Tank

## FUEL SUCTION LINES

Section 5 D……...……..……..Suction Line FP-100 Only
Section 5 E……..……..Suction Line FP-150 Only
(Includes Hi Flow Suction Tube)

## ELECTRICAL HARNESS

Section 6…..……..……Electrical Harness
Section 7..……..…..Initial Startup Procedure

## MAINTENANCE

Section 8……..……Filter Service Recommendations
Section 9……...Cleaning the Gerotor Assembly
Section 10…….…..The Pressure Regulator

# AirDog®

## MODEL FP-100 & FP-150

The installation of your **AirDog®** can be made relatively easy by following the steps outlined in this manual, and:

1. Inventory the package components completely. Notify *PUREFLOW® AIRDOG* immediately of any parts missing or damaged.

2. Read the installation manual completely. Understand how the system operates and installation recommendations before beginning installation.

3. The installation recommendations contained herein are suggested installation guidelines only. Individual installations may vary.

4. If any installation procedure is uncertain, contact *PUREFLOW® AIRDOG* for technical assistance.

5. **When installing the AirDog® fuel lines be sure to keep the ORIGINAL ENGINE RETURN LINE connected as it is from the factory!**

## SAFETY GUIDELINES!

**CAUTION!** Please be sure to chock the vehicle's tires to prevent rolling.

**CAUTION!** Please use proper supports when working beneath an elevated vehicle.

**CAUTION!** Most diesel pickups have two (2) 12volt batteries. Disconnect the battery cables to both batteries before proceeding with the AirDog® installation.

**CAUTION!** Vehicle frame rails should not be drilled into or welded upon.

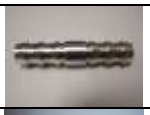
**CAUTION!** Wear safety glasses when operating power tools such as drills and grinders or when using a punch or chisel.

**CAUTION!** Use common sense when routing fuel lines and electrical harnesses. Keep them away from hot exhaust components and/or moving parts. Properly secure lines to prevent chaffing.

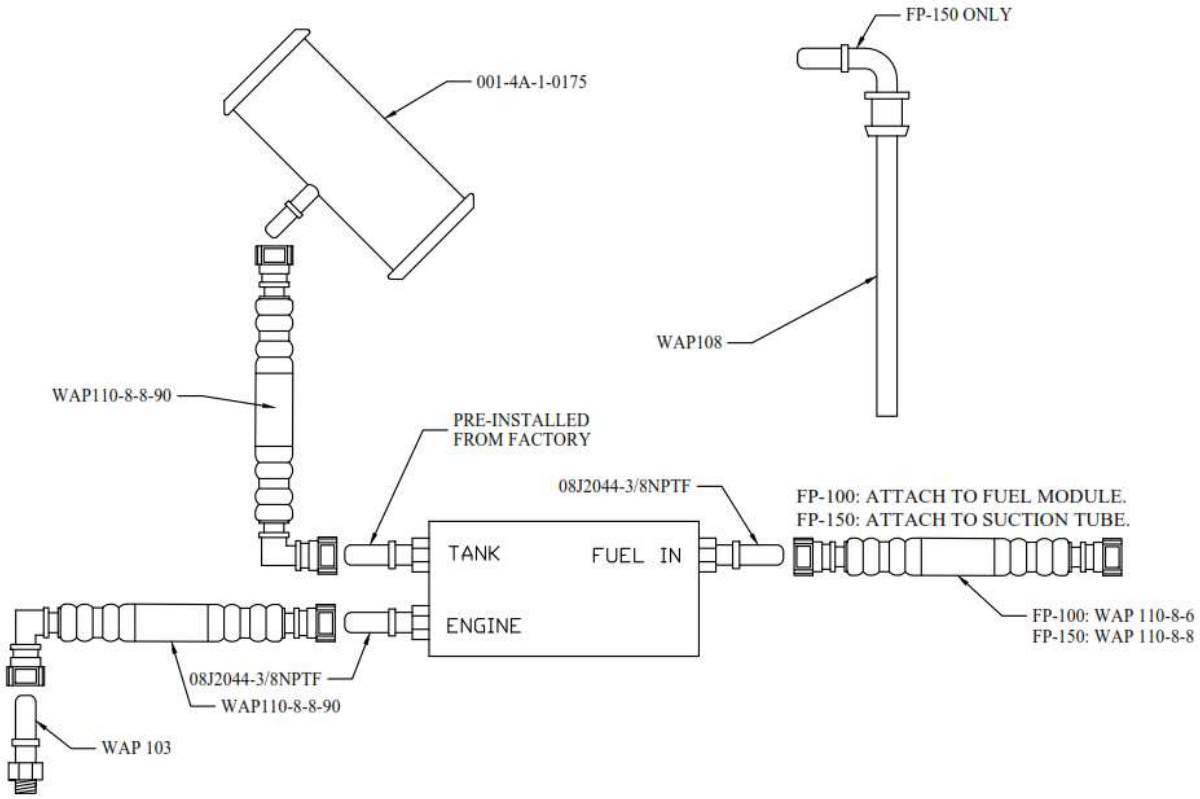
Use Good Judgment and Common Sense When Installing the AirDog®!

# AirDog® Parts List

| QTY | DESCRIPTION | Part Number | IMAGE |
|---|---|---|---|
| 1 | **Installation Manual** | 201-1-0102 | |
| 1 | ***AirDog®*** | FP-100<br>*Or*<br>FP-150 | |
| 1 | **AirDog® Mounting Bracket** | 001-3C-0004 | |
| 1 | **Mounting Hardware Kit**, | 901-61-0102-PM | |
| 1 | **Frame Bracket Set** | 010-3C-0002PC<br>010-3C-0001PC | |
| 1 | **Wiring Harness** | 5E-2-010 | |
| 1 | **Bundle of Plastic Ties** | 5H-2-1-06/12 | |
| 1 | **Return Fuel Filler Tube** (with 2 Clamps) | 001-4A-1-0175 | |
| 1 | **"P" Pump Flexible Return Line** | 4C-1-02-05-001 | |
| 1 | **High Flow Suction Tube** **(For FP-150's Only)** | WAP108 | |
| 1 | **Grommet** **(For FP-150's Only)** | 5J-1-1-04-0001 | |
| 1 | **Spacer** | 010-3C-0003-A-P | |
| 1 | **Suction Hose Assembly** **(For FP-100 Only)** | WAP110-8-6 | |
| 1 | **Suction Hose Assembly** **(For FP-150 Only)** | WAP110-8-8 | |
| 1 | **Return Hose Assembly** | WAP107-8-8 | |
| 1 | **Pressure Hose Assembly** | WAP110-8-8-90 | |
| 1 | **14mm X ½" male SAE J2044 Fitting** | WAP103 | |
| 1 | **Sealing Washer (installs on WAP103 fitting)** | 1P-5-ES | |
| 1 | **Customer Service Oring Replacement Kit** | 901-05-0101 | |

| | | | |
|---|---|---|---|
| 3 | **Push Lock Hose Splice** | 001-4A-1-0026 |  |
| 2 | **1/2” Male SAE J2004 Quick Connect x 3/8” NPTF** | 08J2044-3/8 NPTF | |
| 2 | **5/16” Push Lock X ¼” Male NPT** | 4A-1-18-05-04 | |
| 1 | **Injection Pump Return Tee** | 001-4A-1-0008 | |

## ILLUSTRATION OF QUICK CONNECT COMPONENTS



# Installing the AirDog® & Mounting Brackets on the Truck's Frame!

Figure 2

Figure 3

4-1. Assemble the AirDog® mounting bracket to the frame bracket.

Figure 4

Figure 5

4-2. Use the spacer block to clear lines and wiring harnesses on the frame. Adjust the assembly up or down on the frame bracket as necessary for clearance.

4-3. Install a 1/2" J2004 QC x 3/8" NPTF male quick connect (08J2044-3/8NPTF) into the "ENGINE" and "FUEL IN" ports in the AirDog®.

Figure 6

**WARNING:** The NPT fitting threads must be lubricated with oil or anti-seize compound before installation to prevent galling!

4-4. Attach the AirDog® to the frame bracket assembly.

Figure 7

# Installing the AirDog® & Mounting Brackets on the Truck's Frame, cont'd!

**NOTE:** The AirDog® can be mounted on either the inside or the outside of the frame, as space or personal choice dictates.

Figure 8

**Mount The AirDog® Outside The Frame**

**OR**

Figure 9

Figure 10

**Inside The Frame**

Figure 11

For this installation, the AirDog® is mounted inside the frame!

4-5. Clamp the frame between the AirDog® bracket assembly and the backing plate using the bolts, lock washers, and nuts included in the kit.

Figure 12

4-6. Position the AirDog® on the frame as necessary for clearance.

**NOTE:** Be sure to mount the AirDog® so the 'FUEL IN' port is directed toward the rear of the vehicle.

Figure 13A

Figure 13B

**NOTE:** Some pickup model frame rails have a bracket that is used to support the frame during the manufacturing process. If this bracket is on your frame rail and obstructs the proper positioning of the AirDog® mounting bracket, you may remove part or all of it, as needed. Be very careful not to damage the frame flange!

# Installing the Fuel Supply Line from the AirDog® to the P-7100!

**For optimum engine performance, it is recommended to bypass the factory filter canister when installing the AirDog® fuel system.**

5A-1. Remove the 14mm banjo bolt and original factory fuel supply line at the fuel inlet port of the P-7100 injector pump and from the original fuel filter head outlet port.

P-7100 Fuel Inlet Port

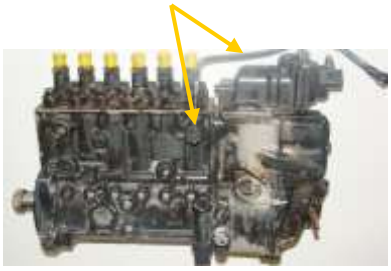


Figure 14

Figure 15

Figure 16

5A-2. Install the WAP 103 fitting with seal washer into the inlet port of the P-7100 vacated by the original banjo fitting.

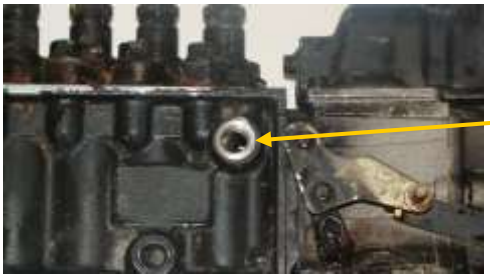


Figure 17

5A-3 Insert the female quick connect end (see figure 18) of the "pressure hose assembly" into the male quick connect fitting previously installed in the port marked "ENGINE". You will a "click" when it connects.

Figure 18

5A-4. Connect the other end of the "pressure hose assembly" to the inlet fitting installed in step 5A-2. It will "click" when properly connected.

5A-5 Any excess fuel hose can be addressed by routing the hose in a fashion to take up the extra length, or a section of the hose can be removed. Push lock splices have been included if you choose to remove the excess hose.

**NOTE**: It is not necessary or recommended to keep the factory filter canister in the system, the additional flow restriction of the factory filter could cause excessive pressure drops.

## Section 5-B: P-7100 Injector Pump and Injector Bleed Line Return

**NOTE:** Fuel is returned from the P-7100 fuel pump and also from the injector bleed line(s). The original 12 Valve Cummins configuration returns the fuel from the P-7100 injector pump (Ref. Fig 18) directly to the fuel tank (Ref. Fig. 29) while the injector bleed line is routed to the inlet port of the fuel filter head (Ref. Fig. 20) to be recycled back to the engine. When installing the AirDog®, it is best to route the fuel from the injector bleed line back to the fuel tank as well.

Figure 19
Return line from the 'P' Pump.

Figure 20
End of steel line from P-7100 that connects to the tank return line.

Figure 21
Injector Bleed Line

5B-1. Disconnect the injector bleed line (Ref. Fig. 21) by removing the 8 mm banjo bolt. Be careful to not misplace the O'ring washer that seals the banjo fitting.

5B-2. Disconnect and remove the banjo fitting and metal fuel line connecting the fuel pump to filter head the.

5B-3. Remove the fuel filter head.

Figure 22

5B-4. Connect the injector bleed line banjo fitting (Ref. Fig. 22) with 8mm banjo bolt to the Return "T" Push Lock Coupler.

Figure 23

Figure 24

Figure 25

# P-7100 Injector Pump and Injector Bleed Return Line, cont'd!

5B-5. Connect the 'P' pump metal return line (Ref. Fig. 26) to the return "T" push lock coupler fitting with the flex fuel line (Ref. Fig. 25).

Figure 26

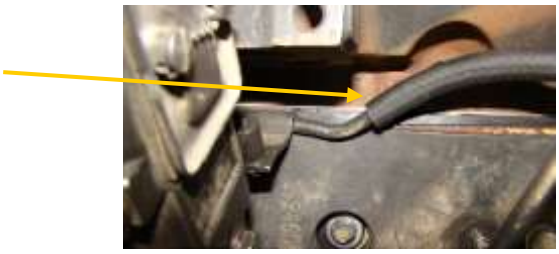


Figure 27

**NOTE:** Be sure to plug or cover the port in the fuel pump vacated by the fuel line to prevent contamination of the pump.

5B-6. Connect the original fuel return line to the other end of the Return "T" Push Lock Coupler fitting.

Figure 28

**NOTE:** The mechanical fuel pump must be disabled by removing the plunger.

5B-7. Remove the mechanical lift pump by removing the two bolts on each side of the pump. Remove the plunger. Be very careful, DO NOT drop the plunger into the oil pan.

Figure 29

**Block Off Plate**

Figure 30

5B-8. Either re-install the pump on the engine without the plunger or cover the mechanical pump port on the engine with a Big Block Chevy pump "block off" plate from your local auto parts store.

# Fuel Return Line from the AirDog® to the Tank

Installing the fuel 'Return to Tank' assembly in Filler Tube

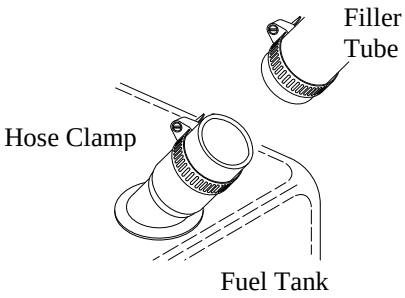



Figure 31

5C-1. Cut filler tube as illustrated, removing ½ inches. Loose assemble clamps on each end of filler tube.

Figure 32

Figure 33

5C-2. Insert "Return Fuel Filler Tube" assembly in filler tube**. INSTALL THE FILLER TUBE WITH ARROWS POINTING TOWARD THE TANK!!** SEE FIG 32 Properly tighten clamps.

5C-3. Insert the SAE female quick connect end (see Figure 33) of the "Return Hose Assembly" into the pre-installed male quick connect fitting in the port marked "Tank". The fitting will "click" when properly installed.

5C-4 Attach the other end of the "Return Hose Assembly" onto the male end form of the "Return Fuel Filler Tube" installed in step 5C-2. A "click" will be heard when the fitting is properly connected.

5C-5 Any excess fuel hose can be addressed by routing the hose in a fashion to take up the extra length, or a section of the hose can be removed. Push lock splices have been included if you choose to remove the excess hose.

# Fuel Suction Line for AirDog® FP-100!

**NOTE:** The AirDog® FP-150 requires a High Flow Suction Tube. If you are installing an AirDog® FP-150 skip Section 5D and go to section 5E for these installation instructions!

## Connecting the Fuel Suction Line from the Tank to AirDog® FP-100

Figure 34

Figure 35

5D-1. Insert the female connect end (see figure 36) of the "Suction Hose Assembly" to the male quick connect fitting previously installed in the "Fuel In" port. A "click" will be heard when the fitting is properly connected.

Figure 36

5D-2. Remove the original fuel suction line Quick Connect fitting from fuel tank by squeezing the tabs on the end of the connector together. Consult factory manual if unsure.

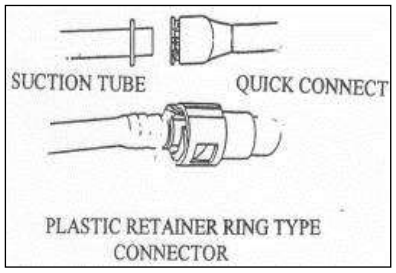
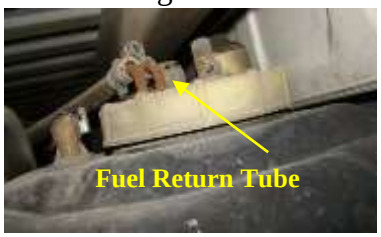



Figure 37




View From Beneath Bed

Figure 38

Figure 39

In More Detail

To release the quick-connect fitting from the fuel tank suction tube, push the fitting toward the suction tube while firmly holding the plastic retainer ring into the fitting. With the plastic ring firmly depressed, pull the fitting assembly from the suction tube. Use care to hold the retainer ring square to the Quick Connect Fitting body. It may be difficult to disconnect the fitting if the retainer is cocked or becomes cocked during removal.

# Fuel Suction Line for AirDog® FP-100, cont'd

5D-2 **Very Important:** After removing the factory line check to make sure that the blue plastic retainer was removed with the line. If the blue retainer remained attached to the tank tube, it MUST be removed before the new fuel line Quick Connect will connect and seat to the tank suction tube.

5D-3. Attach the other end of the "Suction Hose Assembly" to the male quick connect on the top of the fuel module where the factory suction line was once located. A "click will be heard when the assembly is properly connected.

Figure 40

5D-4. Any excess fuel hose can be addressed by routing the hose in a fashion to take up the extra length, or a section of the hose can be removed. Push lock splices have been included if you choose to remove the excess hose.

# INSTALLING THE AIRDOG® FP-150 ONLY *HIGH FLOW* SUCTION TUBE

The AirDog® 150 includes a ½" *High Flow* suction tube to accommodate the high flows of this system. To install the ½ suction tube it is necessary to either drop the fuel tank or to lift the truck bed.

**NOTE:** Should you choose to drop the fuel tank, support the tank as it is when it is installed on the truck. If you let it rest flat on the floor, the tank may squash out and the suction tube will be too short after the tank is re-installed in the truck. The suction tube, being cut too short may suck air as the fuel drops below ¼ tank level.

**NOTE:** Should you choose to pull the pickup bed to access the tank. Be sure to disconnect the tail light wires, fuel tank filler tube, and any other accessories or components that may be secured to the frame and bed.

**When Dropping the Tank, Always Remember Safety First!**

Figure 41

Figure 43

Figure 42

**If you choose to remove the bed, properly support the truck bed to prevent serious injury or death!**

Figure 44

Figure 45

# INSTALLING THE HIGH FLOW SUCTION TUBE, Cont'd

**NOTE:** The fuel tank used for the pictures is an example only and may not be exactly the same as your tank.

IMPORTANT: Select a location for the suction tube that has adequate clearance below the bed. Also consider that under hard acceleration, fuel will migrate toward the back of the fuel tank.

5E-1. Remove the collection basket.

Figure 46

Figure 47

5E-2. Drill a 1-1/8" hole at the selected location in the fuel tank for the suction tube. Hold a container below the drill point to catch debris.

Figure 48

Figure 49

5E-3. Remove all burrs from the edge of the hole.

Figure 50

Figure 51

5E-4. Install the grommet in the new suction tube access hole.

# INSTALLING THE HIGH FLOW SUCTION TUBE, Cont'd

5E-5. Measure and cut the suction tube to a length that will allow approximately 1/8" clearance off the bottom of the tank. It is suggested to form the end of the tube similar to Figure 52.

Figure 52

5E-6. Lubricate the bulkhead fitting with motor oil. Pressing firmly, insert the suction tube assembly into the grommet. Be sure the bulkhead fitting is completely seated in the grommet.

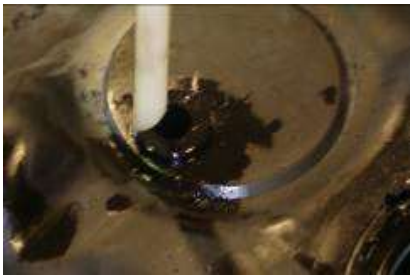


Figure 53

Figure 54

5E-7. Re-install the Collection basket.
Re-install the factory return line to the proper port of the Collection basket before the tank fully re-installed.

Figure 55

5E-8. Connect the end of the "Suction Hose Assembly" to the bulk head fitting while it is easily accessible. A "click" will be heard when it is properly installed.

5E-9 Any excess fuel hose can be addressed by routing the hose in a fashion to take up the extra length, or a section of the hose can be removed. Push lock splices have been included if you choose to remove the excess hose

## INSTALLING THE HIGH FLOW SUCTION TUBE, Cont'd

5E-10. If the fuel tank was dropped to install the suction tube, re-install the fuel tank. If the truck bed was removed, reinstall the bed.

**Section 6** **Electrical Harness**

## The *AirDog*® is equipped with a relay controlled wiring harness.

### WIRING DIAGRAM (In Red)

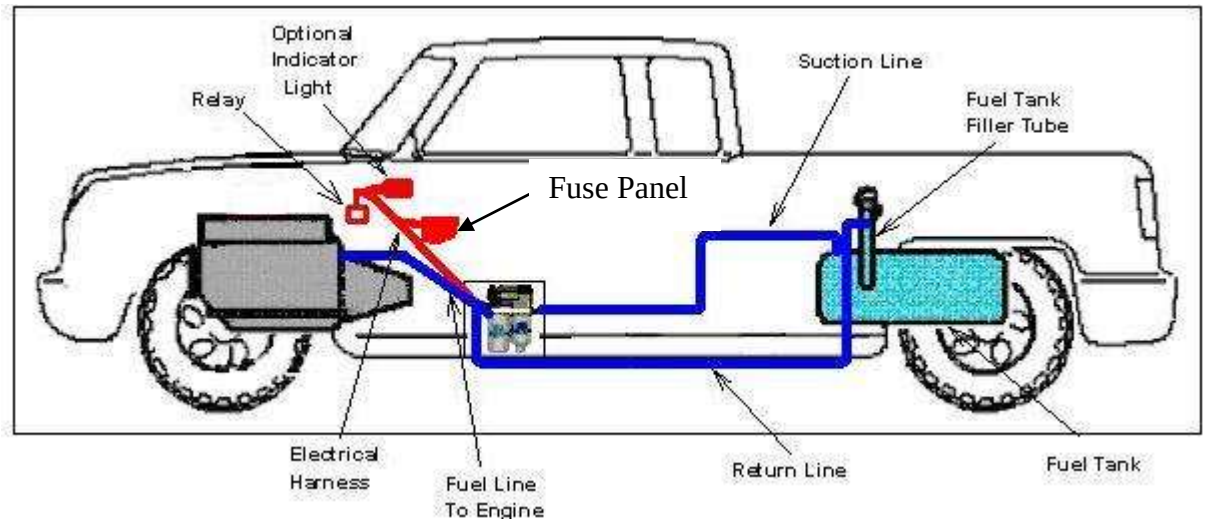



Figure 56

The AirDog® is activated through a relay controlled wiring harness connecting directly to the fuse panel.

AirDog® Pump Motor Lead

**Optional Pressure Sensor/Switch Lead***

Indicator Light Lead

Battery Positive Lead

Battery Negative Lead

Mini Fuse Tap Relay Lead

Figure 57

**CAUTION:** If the *OPTIONAL* Low Pressure Indicator Light is not used, be sure to insulate the two (2) #10 Indicator Light connectors to prevent accidental contact. **The light kit is sold separately and is not included in the kit.**

## Securing the Relay and Fuse Holder to the Vehicle

6-1. Secure the relay and fuse holder to the vehicle.

Figure 58

Figure 59

## Connecting the AirDog® Relay Control to the Fuse Panel

6-2. Route the red, Relay Trigger, wire with the mini fuse tap attached to the fuse panel located inside the cab on the driver's side. Insert the mini fuse tap into a spare fuse holder or key hot source on the panel that is "hot" when the starter Route the red, Relay Trigger, wire with the mini fuse tap attached to the fuse panel located inside the cab on the driver's side. Insert the mini fuse tap into a spare fuse holder or key hot source on the panel that is "hot" when the starter key is turned to the on position. If you are installing in a spot that is already in use you will need to remove that fuse and install it into the fuse tap provided so both fuse spots are occupied.

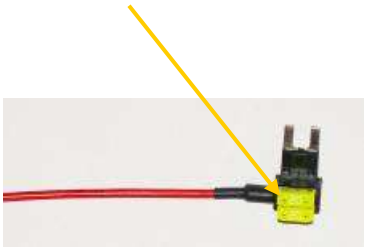


Figure 60

6-3. Route the AirDog® pump motor lead to the AirDog®. Connect the 2 pin Deutsch connector on the end of the wiring harness into the corresponding pump motor lead connector on the AirDog®.

**NOTE:** If the Optional Indicator Light is not used, secure the pressure switch lead to the wiring harness with a plastic tie. Also, cover the pressure sensor lead to protect it you may want to use it later.

**NOTE:** The power supply leads can be connected to the battery or the alternator. Connecting the power supply leads to the alternator instead of the battery will create a corrosion free connection.

Black (-) Red (+)

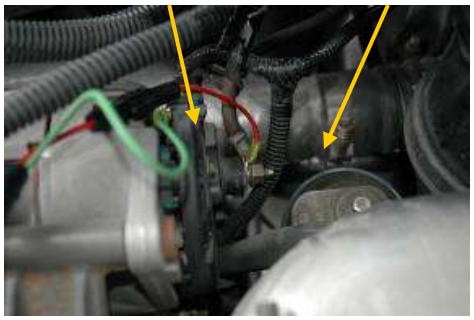


Figure 62

Replace the Protective Cover

Figure 63

6-4A. Route the Red & Black power supply leads to the alternator Connect the Black (-)lead to the alternator *Chassis Ground* connection. Connect the Red (+) lead to the alternator *Hot Lead* going to the battery.

6-4B. Should you choose to connect the power supply leads directly to the battery, connect the RED (+) lead to the POSITIVE (+) post of the driver's side battery. Connect the BLACK (-) lead to the NEGATIVE (-) post of the same battery.

Black (-) Red (+)

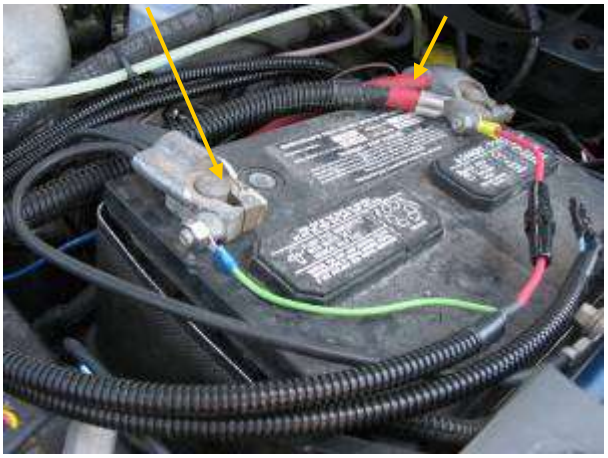


Figure 64

# INITIAL START PROCEDURE

The ***AirDog***® is a self priming system, however, to prevent potential damage to the system, it is recommended to fill only the pre-filter with diesel fuel before initial startup.

7-1. Fill the water separator with diesel fuel.

7-2. Turn the starter key to the on/run position.

7-3. While the ***AirDog***® is operating, bleed the fuel line to the engine of air by loosening the fuel line connection at the engine fitting. As soon as the line is purged of air and pure fuel is observed, properly tighten the fuel fitting. **NOTE:** put a rag or shop towel over and around fitting to prevent splatter. Catch all spilled fuel and dispose of properly.

7-4. Start engine!

**RECHECK ALL FUEL FITTINGS FOR LEAKAGE AND PROPERLY TORQUE. BE SURE ALL FUEL LINES ARE PROPERLY ROUTED TO PROTECT FROM EXCESSIVE HEAT AND SECURED TO PROTECT FROM CHAFFING AND ABRASION. RECHECK ALL ELECTRICAL LINES, SECURE AS NECESSARY.**

## Checking Pump Noise!

**NOTE:** Each AirDog® has been manufactured in a Quality Controlled process and wet tested for operation and performance before shipment. This is a very quiet and smooth running system. However, if any fuel fitting on the vacuum side, between the fuel tank and the AirDog® or the pre-filter, has been left loose during the installation process, the system may suck air at an excessive rate and will be very noisy. To check for this problem, unscrew the pre-filter 3 or 4 full turns and activate the AirDog® by turning the ignition switch to on. If the AirDog® runs quietly, then excessive air from a loose fitting or leaking pre-filter seal is most likely the reason for the excessive noise. Correct as necessary.

A. The seal groove in the 3” water separator is a snug fit and on occasion the seal has been found to not be fully seated. Remove the water separator; remove the seal from the top of the nut plate. Clean and lubricate the seal groove. Carefully replace the seal in the groove. Be sure to fully seat the seal.

B. Check all fittings, especially the quick connect at the tank.

# Filter Service Recommendations

Plugging of either the fuel filter or the water separator itself will cause low fuel pressure and low flow to the engine. If a low fuel pressure issue exists, replace the fuel filter. Typical fuel filter life is 15-20k miles depending on fuel quality.

## The Water Separator

Replace the water separator every other time you change the Fuel Filter or if it becomes damaged or plugged. It is suggested to check/drain the water separator every three months or as needed should you experience excessive 'water in fuel' conditions. When installing the water separator, be sure to clean the under side of the AirDog® base. Follow the instructions printed on the pre-filter for proper tightening procedures.

**CAUTION:** Be extremely careful to prevent any contaminates or debris from entering the pre-filter when removing it for cleaning! Large debris will jam the Gerotor and cause the fuse to blow. This is not a warranty item. Should this happen, you can easily put the system back into working order. See the instructions on "How to clean the Gerotor" for proper procedures.

## The Fuel Filter

Remove the fuel filter by turning it counter clockwise. Do Not pre-fill the fuel filter with fuel. The AirDog® will fill the filter and prime the system automatically. Follow the instructions on the filter for proper tightening procedures.

**CAUTION:** Dispose of waste fuel and used filters properly to protect OUR environment!

# Cleaning Foreign Debris from the Gerotor Assembly

Step 1
Remove the four (4) socket head cap crews that secure the gerotor cap.

Step 2
Carefully remove the O'ring, you will need to re-use it.

Step 3
Remove and clean the gerotor. Be very careful not to damage the gerotor.

Step 4
Clean the inside of the gerotor pocket.

Step 5
Replace the O'ring and center gear.

Step 6
Align the teeth and install the outer gear.

Step 7
Install the gerotor cap. Be very careful to index the cap to position the wide space between the half moon cuts to the bottom.

Step 8
Replace the cap into position. Be very careful, do not pinch the O'ring. Torque the cap screws. in an opposing pattern.

# Changing the Regulator Spring

## The AirDog® is shipped from the factory with the fuel pressure preset.

For the 1994-1998 Dodge Cummins, the AirDog® fuel outlet pressure is preset at 25/30 PSI. Should the need arise to change the spring follow the instructions outlined below.

# Regulator Spring Replacement Procedure

## The regulator spring and ball assembly is located inside the Return to Tank fuel port.

Step 1. Disconnect the 'Return to Tank' fuel line.

Figure 10-1

Figure 10-2

Figure 10-3

Step 2. Remove the 'Return to Tank' fuel line fitting exposing the regulator spring.

Step 3. Remove the ball and spring.

Figure 10-4

Figure 10-5

Figure 10-6

Step 4. Install the new regulator spring by reversing the steps shown in Figures 10-1 through 10-6. Be sure to place the regulator ball in the regulator seat before inserting the spring. Properly torque the return line fitting and snap the connection when finishing.

PUREFLOW AIRDOG

# *LIFETIME LIMITED EXPRESS WARRANTY*

FOR

Covered PureFlow AirDog I, II and Raptor Systems

**IMPORTANT NOTICE**

**TO ACTIVATE YOUR PURFLOW AIRDOG WARRANTY, YOU MUST COMPLETE AND MAIL YOUR WARRANTY CARD TO PUREFLOW AIRDOG WITH A COPY OF YOUR ORIGINAL SALES RECEIPT WITHIN 30 DAYS OF PURCHASE. FAILURE TO COMPLETE AND SUBMIT YOUR WARRANTY CARD WILL RESULT IN A WARRANTY PERIOD OF THE COVERED PRODUCE TO ONE (1) YEAR FROM THE DATE OF PURCHASE.**

PureFlow AirDog (hereafter collectively, "SELLER") warrants and guarantees only to the Original Purchaser (hereafter collectively, BUYER) that the PureFlow AirDog systems FP-100, FP-150, Raptor Fuel Pump RP-100 or RP-150 (hereafter collectively, PRODUCT) shall be free from defects of materials and workmanship in the manufacturing process for as long as the BUYER owns the PRODUCT.

The Lifetime Limited Express Warranty is limited to the PRODUCT purchased by the original BUYER of the PRODUCT and limited solely to the parts contained within the PRODUCT and EXCLUDES ALL ELSE INCLUDING FILTERS AND WATER SEPARATORS. Any PRODUCT that is in question of Warranty must be returned, shipped prepaid, to PureFlow AirDog. All Warranty claims are subject to the approval of PureFlow AirDog. If it is determined that a Warranty claim exists, PureFlow AirDog will, at its sole discretion, replace the defective PRODUCT with a comparable PRODUCT, repair the defective PRODUCT, or refund the BUYER"S purchase price in exchange for the PRODUCT. Repairs or replacements are warranted for only the remainder of the original warranty period and only to the original BUYER.

Under no circumstances shall the SELLER be liable for any labor charged or travel time incurred in the diagnosis for defects, removal, or reinstallation of the PRODUCT, or any contingent expense.

Under no circumstances will the SELLER be liable for any damage or expense incurred by reason of the use or sale of the PRODUCT.

Other than expressly set forth herein, the SELLER shall in no way be responsible for the proper or improper use and service of the PRODUCT. In no event shall the SELLER be liable for any special, incidental, indirect or consequential damages of any kind or nature, whether or not the BUYER of the PRODUCT was advised of the possibility of damage or harm, arising or resulting from the use or performance of the PRODUCT and BUYER hereby waives the right to any and all such claims.

BUYER, acknowledges that he/she is not relying on SELLER'S skill or judgment to select or furnish goods suitable for any particular purpose and that SELLER has no liability that will extend beyond the scope of the LIMITED EXPRESS WARRANTY contained herein, and BUYER hereby waives all remedies or liabilities, expressed or implied, arising by operation of law or otherwise.(including, without limitation, any obligation of SELLER with respect to fitness for any particular purpose; merchantability; and special, incidental, indirect or consequential damages) or whether or not occasioned by SELLER'S negligence.

SELLER disclaims any warranty and expressly disclaims any liability for personal inquiry or damages related to BUYER'S use of the PRODUCT. BUYER acknowledges and agrees that the disclaimer of any liability for personal injury is a material term for this agreement and BUYER agrees to indemnify SELLER and hold SELLER harmless from any claim related to the PRODUCT and its use or performance. Under no circumstances will SELLER be liable for any damages, liabilities, costs or expenses incurred as a result of or by reason of use, performance or sale of the PRODUCT, including without limitation, any damages, liabilities, costs or expenses incurred by reason of BUYER'S negligence related to those uses of the PRODUCT.

The proper installation of the PRODUCT is the sole responsibility of the BUYER. The SELLER assumes no liability regarding improper installation or misapplication of the PRODUCT.

SELLER hereby provides the following limited warranty as to description, quality, merchantability, fitness for the PRODUCT'S purpose, productiveness, or any other matter of SELLER'S PRODUCT sold herewith. The SELLER shall be in no way responsible for the open use and service of the PRODUCT and the BUYER hereby waives all rights other than those expressly written herein. This Warranty shall not be extended or varied except by a written instrument signed by SELLER and BUYER.

**IN THE EVENT THAT THE BUYER DOES NOT AGREE WITH THIS AGREEMENT, THE BUYER MAY PROMPTLY RETURN THE PRODUCT, IN A NEW AND UNUSED CONDITION, WITH A DATED PROOF OF PURCHASE, TO THE PLACE OF PURCHASE WITHIN THIRTY (30) DAYS FROM THE DATE OF PURCHASE FOR A FULL REFUND. THE BUYER AGREES THAT THE INSTALLATION OF THIS PRODUCT CONFIRMS THE BUYER HAS READ AND UNDERSTANDS THIS AGREEMENT AND ACCEPTS THE TERMS AND CONDITIONS OF THIS AGREEMENT.**

# Warranty Procedure

In the unlikely event a warranty appears as if it may be warranted, the following steps are taken:

1. The customer discussed the symptoms of the problem with a PureFlow AirDog Technician. The customer is to have the system Serial Number and Model Number available for the Technician when the call is made. This will expedite all steps of the process.
2. The customer performs any and all tests requested by the PureFlow AirDog Technician. This is done to isolate the potential problem while eliminating potential installation or maintenance related issues,
3. If the PureFlow AirDog Technician determines based on the customer feedback concerning the requested testing that system may be at fault, the customer is advised that all returned pumps are tested upon arrival and should this returned pump perform at design criteria upon arrival, the customer will be charged a $50.00 fee.
4. The PureFlow AirDog Technician will first request the customer's phone number in the event the phone call is accidentally disconnected and then transfer the customer to a PureFlow AirDog Customer Service Representative. Should a Customer Service Representative not be available, the Technician will offer the Customer the option to hold, call back, or receive a return call.
5. The PureFlow AirDog Customer Service Representative will check to determine if the customer's Warranty Registration Card is on file.
    a. If no Warranty Registration is found, the customer will be required to supply the original purchase receipt showing the purchase date.
    b. If no Warranty Registration is found, the customer will be advised of the options should the system in question is out of the default warranty period (1 year).
6. The PureFlow AirDog Customer Service Representative will request the customer information, including: Name, Address, Phone Number, Model Number, Serial Number, Year / Make / Model of vehicle, Name of Dealer purchased from, Purchase Date, Description of Problem, Customers' understanding of the resolution, and customer credit card information.
7. PureFlow AirDog will cover Ground Shipping charges to ship the replacement unit and will include a prepaid shipping label for the return of the defective unit. Any additional items ordered at the time of the replacement shipment will include their portion of the shipping cost.
8. A period of 15 Calendar Days from the time of shipment is provided for the receipt of the defective unit at the PureFlow AirDog facility. Failure to return ship the defective unit to arrive within the defined time period will result in a charge of $250.00 against the customer's credit card as the purchase cost of the defective unit.